



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/051,299	01/22/2002	Masaki Ohmura	50212-338	4776

20277 7590 04/03/2003
MCDERMOTT WILL & EMERY
600 13TH STREET, N.W.
WASHINGTON, DC 20005-3096

EXAMINER

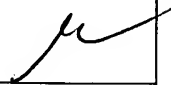
LIN, TINA M

ART UNIT PAPER NUMBER

2874

DATE MAILED: 04/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/051,299	Applicant(s) OHMURA ET AL. 	
	Examiner Tina M Lin	Art Unit 2874	

-- Th MAILING DATE of this communication app ars on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-9, 11, 13, 16 and 17 is/are rejected.
- 7) ☒ Claim(s) 4, 10, 12, 14, 15, 18 and 19 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

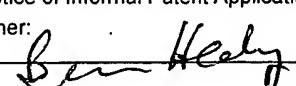
Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 July 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3 and 8</u> . | 6) <input type="checkbox"/> Other:  |

DETAILED ACTION

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 8, 9, 11, 13, and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,427,041 B1 to Strasser et al. In regards to claims 1-3, Strasser et al. discloses an optical waveguide type filter with a tilted refractive grating index. But Strasser et al. fails to mention the fiber grating to be perpendicular to a level plane at a given point, an optical axis varying depending on the position of a point, and the plane having a part rotated about the axis. However, diagramming a plane perpendicular to the fiber gratings at the given point would have been easily accomplished in order to ease the process of taking measurements and angles from the optical waveguide. After diagramming a plane, the optical axis would obviously depend on the position of that point and a part of the plane being rotated about the axis. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have included a fiber grating to be perpendicular to a level plane at a given point, an optical axis varying depending on the position of a point, and the plane having a part rotated about the axis in an optical waveguide. In regards to claim 8, Strasser et al. discloses an optical fiber communication system that includes an erbium doped fiber amplifiers

Art Unit: 2874

with a pump radiation source. But Strasser et al. fails to mention a line perpendicular with a level plane of the fiber grating, the fiber grating to be perpendicular to a level plane at a given point, and an optical axis varying depending on the position of a point. However, diagramming a plane/line perpendicular to the fiber gratings at the given point would have been easily accomplished in order to ease the process of taking measurements and angles from the optical waveguide. After diagramming a plane, the optical axis would obviously depend on the position of that point and a part of the plane being rotated about the axis. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have included a fiber grating to be perpendicular to a level plane or line at a given point, an optical axis varying depending on the position of a point, and the plane having a part rotated about the axis in an optical waveguide. In regards to claims 9, 11, 13 and 16-17, Strasser et al. discloses an optical waveguide diffraction grating device with refractive index modulated parts not parallel with the optical waveguide longitudinal axis. But Strasser et al. fails to mention the deflection angle planes formed between the line perpendicular to the refractive index plane and that the modulated parts overlap. However, it is well known that the measurement of the deflection angle planes is formed between a line and refractive index plane, as well, as for the modulated parts to overlap. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have included these two properties in an optical waveguide diffraction grating device.

Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,427,041 B1 to Strasser et al., and further in view of U.S. Patent Application Publication US2002/0172461 A1 to Singer et al. Strasser et al. discloses an optical waveguide type filter

Art Unit: 2874

with a tilted refractive grating index. But Strasser et al. fails to mention a plane formed by a line passing through a given point on a fixed optical axis and perpendicular to a level plane.

However, all these properties are commonly known in the field of tilted fiber grating waveguide structures and therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have included a plane formed by a line passing through a given point on a fixed optical axis and perpendicular to a level plane in a tilted fiber grating waveguide structure. Strasser et al. also fails to mention twisting a part of the fiber and securing the twisted part. However, Singer et al. does disclose twisting an optical fiber. Twisting is known in the art of optical fibers for a variety of purposes, such as polarization changes.

Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have twisted a part of the optical fiber. Additionally, if a fiber was twisted, there would be some purpose of the fiber to remain twisted in order to meet certain characteristics or properties desired, therefore it would have been obvious at the time the invention was made to a person having ordinary skill in the art have secured the twisted part of the fiber so that it remained twisted.

Allowable Subject Matter

Claims 4, 10, 12, 14, 15, 16, and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art of record fails to disclose or reasonably suggest an optical waveguide filter type or an optical waveguide diffraction grating type with the property of the planes shift from each other at intervals of $90^\circ/(N-1)$ or $180^\circ/N$ or $360^\circ/N$ or $90^\circ/N$ about the optical axis, where N is the number of groups the fiber grating is

Art Unit: 2874

divided into. The prior art of record also fails to disclose or reasonably suggest a transmission loss of less $1/10$ of the maximum transmission loss value and where the fiber grating is formed where the lines are perpendicular to the refractive index liven lames to form the same angle with an optical waveguide or same period or same amplitude.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References A and D-G discuss fiber grating optical waveguides or fibers either with and without a grating tilt and Reference H discusses amplifiers with optical gratings and doped fibers. None of the documents cited disclose or reasonably suggest the features disclosed in the objected claims as above.

The documents submitted by applicant in the Information Disclosure Statement have been considered and made of record. Note attached copy of form PTO-1449. None of the documents submitted in the Information Disclosure Statement disclose or reasonably suggest the features disclosed in the objected claims as above.


This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).


Art Unit: 2874

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tina M Lin whose telephone number is (703) 305-1959. The examiner can normally be reached on Monday-Friday 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (703) 308-4819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

TML 
March 28, 2003


Brian Healy
Primary Examiner